About Consumer Monitor and Muon

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Muon Mtg
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In this talk, I am covering following items (asked by Michael S.).

- **a brief, informal explanation of how YMON works.**
- **Can we run it ourselves, offline?**
- **If so, can we turn on and off groups of histograms for the sake of speed and the size of the output file?**
- **Can it be directed to fill histograms only when certain triggers are set?**
- **Who is responsible for this program, and whom do we contact if we want changes made? Do we sent new code, or do we explain what we want done?**
- **Are the root output files archived somewhere? If so, where and for how long? Are they organized by run number or by date?**

- **When the CO watches the plots go by, how does he/she decide when a distribution is wrong?**
- **I know that there have been bad CMX distributions to which people don’t react or write error messages. This defeats the purpose of YMON, and needs to change.**
- **Who instructs the CO – presumably not each sub-detector group.**
- **Are there reference plots for him/her to compare to?**

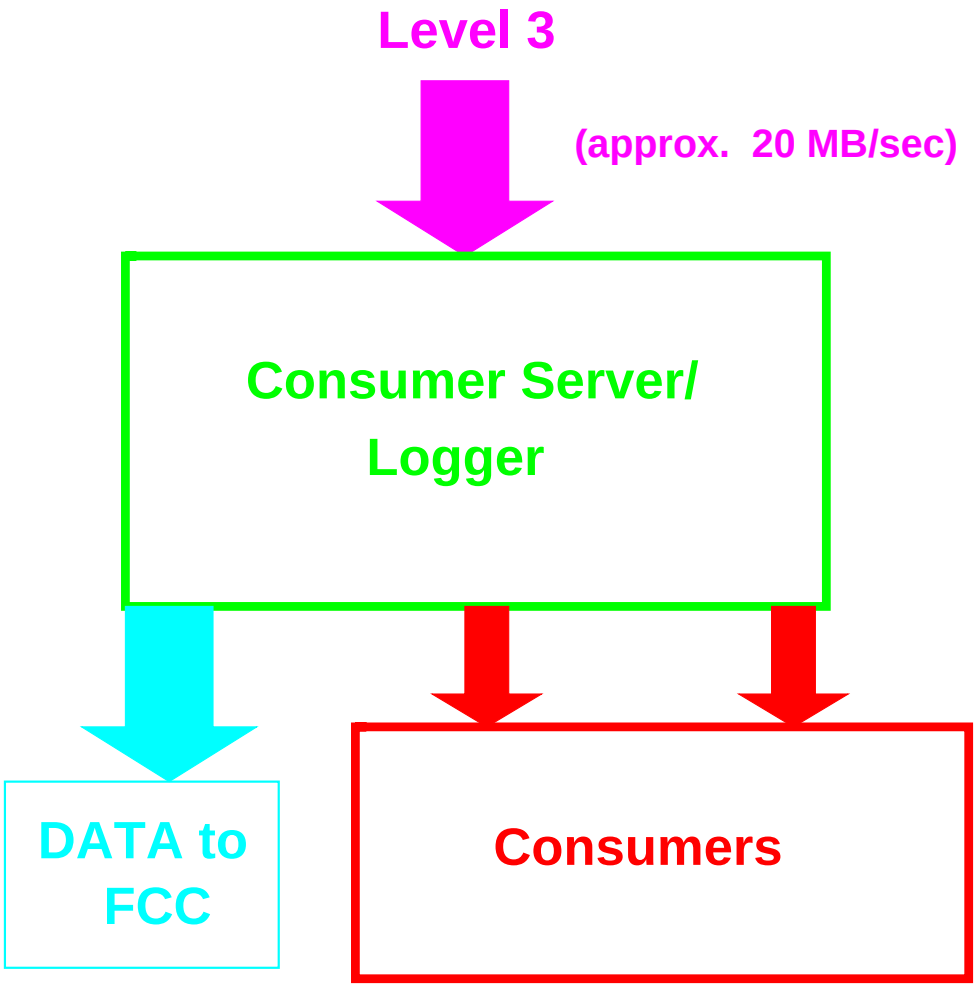
- **a brief, informal explanation of how YMON works.**

RUN II Consumer Framework (not existed in RUN I) provides coherence and flexibility to the online monitoring system (by doing, for example;)

- **separate monitor programs to the display program (the framework provides the display program)**
- **provide template monitor program with common utilities such as display method, error handling, state manager, auto-startup procedure, code management, etc...**

Online Consumer Monitor Home Page:
http://www-b0.fnal.gov:8000/consumer/home/consumer_home.html

How the Consumers get the Data?



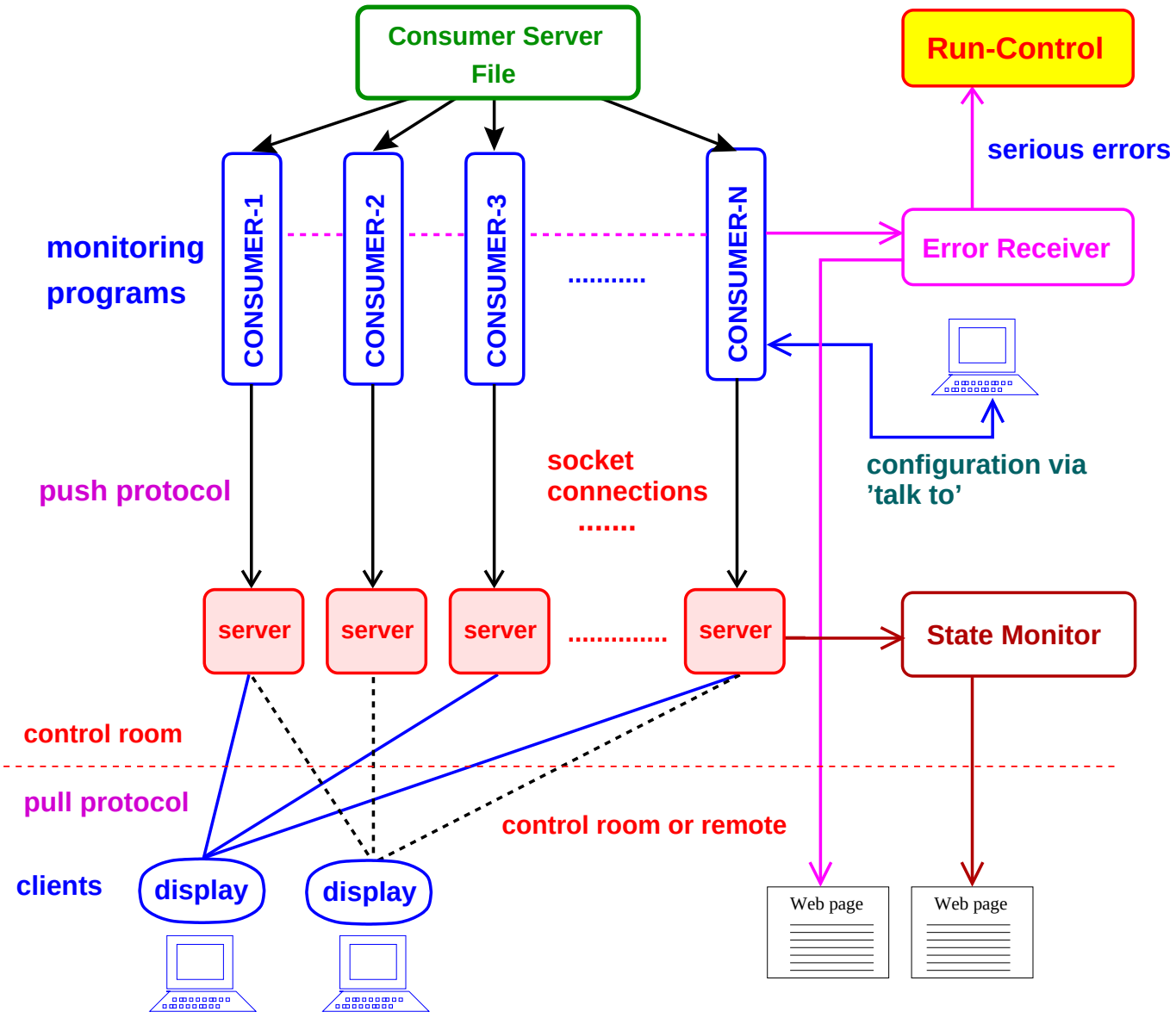
example of consumer monitors:

Event-Display,YMon, Stage0, TrigMon, LumMon etc..

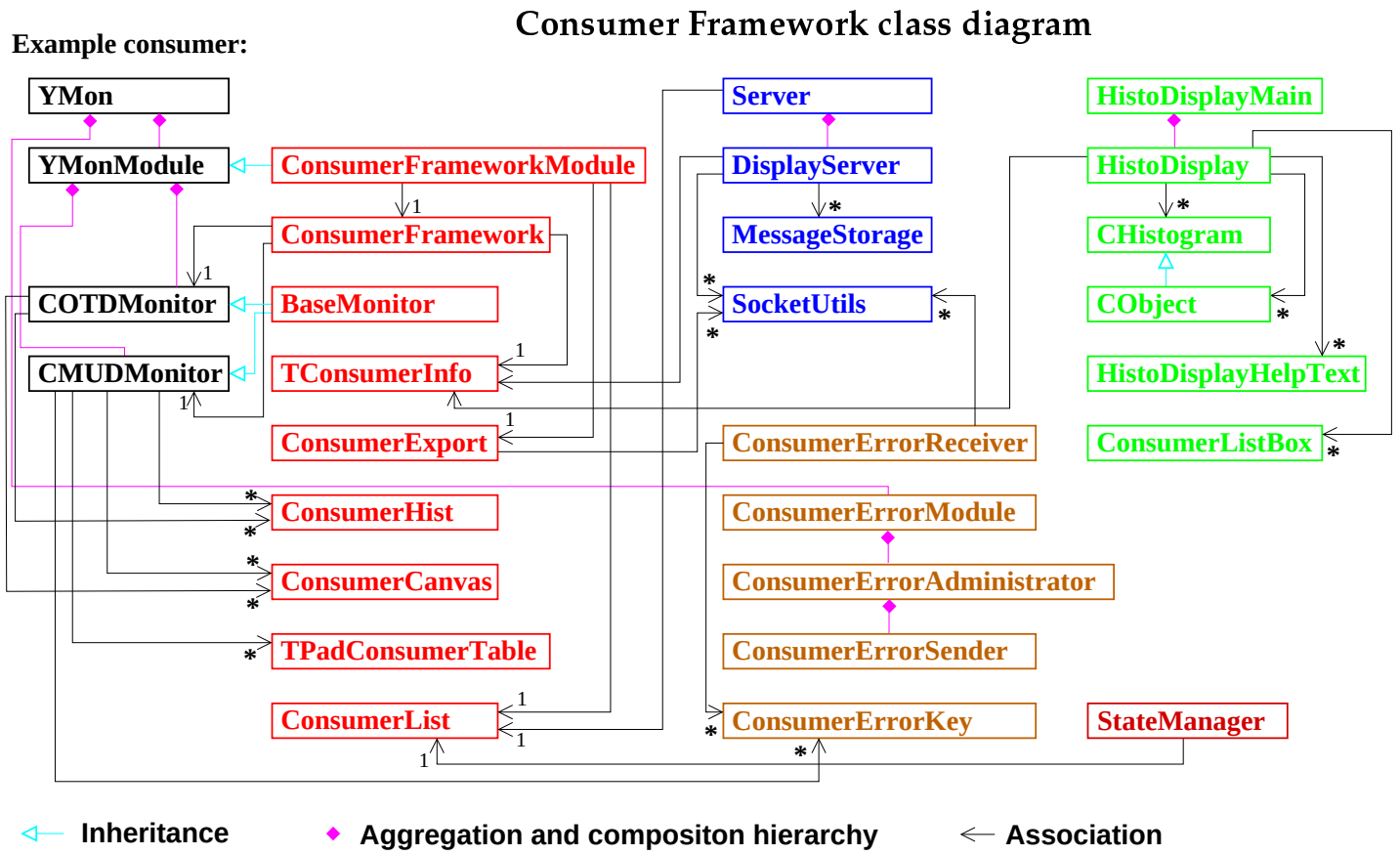
(calibration consumers are the other type of consumers)

Consumers: AC++ plus ROOT modules which look at object in the event stream in real time.

Components of Consumer Framework



Consumer Framework Class Diagram



- **Can we run it ourselves, offline?**
  yes. on the online machine, and also on fcdfsgi2 with the same setup (setup cdfsoftb0). You just need to modify the .tcl file to read-in your favorite input file.

- **If so, can we turn on and off groups of histograms for the sake of speed and the size of the output file?**
  yes. You just need to modify the .tcl file.

- **Can it be directed to fill histograms only when certain triggers are set?**
  yes. You just need to modify the .tcl file. (on online, we are still debugging this process)

- **Who is responsible for this program,**
  Greg
  and whom do we contact if we want changes made?
  Greg
  Do we sent new code, or do we explain what we want done?
  Depends. If the change is simple, just ask Greg to modify. If the change is more complicated, discuss with Greg.

- **Are the root output files archived somewhere? If so, where and for how long? Are they organized by run number or by date?**
  yes. YMon output .root files are on /data1/consumer/results/YMon/ area on the online machine for a while. The files are backed-up on CDs, then they are deleted from the disk after a while. However, we keep some of the .root files from good runs on disk-area: /data1/consumer/keep_results/YMon/. You can find detailed information about the archived .root files on CD's on a web page:

  http://www-b0.fnal.gov:8000/consumer/framework/consumer_results_status.html

  which is linked from the consumer home page:

  http://www-b0.fnal.gov:8000/consumer/home/consumer_home.html

  They are organized by the run numbers. However, through web pages, you can find out the date.

- **When the CO watches the plots go by, how does he/she decide when a distribution is wrong?**
  a good question! There have been a lot of progress, but we can improve much more in this area. We need your help, here.

- **I (Michael) know that there have been bad CMX distributions to which people don't react or write error messages. This defeats the purpose of YMON, and needs to change.**

  agree. Roughly speaking, I see three ways to improve this:

  1. better CO instruction (need your help).

  2. Muon people to look at YMon output more often, find problems. and propagate the findings to the shift-people for the future improvement of the monitoring operation.
  Please remember, there are many sub-detector monitors within YMon. Then there are more than 10 consumer monitors (like YMon) running in the control room which CO needs to look at.

  3. implement automatic error checking in YMon.
  This is foreseen, and consumer framework has a mechanism to report error messages (to the central consumer error receiver, and some sever errors goes to Run_Control via smart socket) and also we have another way to warn shift crew for the abnormality via warning canvas. This is how it works:

When YMon detects abnormality, YMon can use a method provided by a framework to put the histogram and a message describing the problem into a warning canvas. HistoDisplayMain (GUI displaying YMon results), then, automatically detects if there are anything in the warning canvas and pop up a canvas to display the problem-found histograms with the message with red-background. Though we have this mechanism in place, we have not actually used, yet. Reliable problem detections have to be implemented in YMon first, for each histogram before we turn on this.

- **Who instructs the CO – presumably not each sub-detector group.**

  Kaori, Greg (for YMon), coordination with operation managers.

  Subdetector group contribution is 'must'. Please see the web page of TOF in YMon for example. This is provided by TOF people. (see below how to get there.)

- **Are there reference plots for him/her to compare to?**
  Yes.

  In a white binder hardcopy, and also on web page. Please take a look at web page: http://www-b0.fnal.gov:8000/cohelp/cohelp.html and follow the link to YMon, SiliMon, BeamMon, etc.... These are provided by sub-detector people in coordination with the monitor code writers.